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INFLIGHT REFUELING OPERATOR CAREER LADDER, AFSCS 11230, 11250, --ETC(U)
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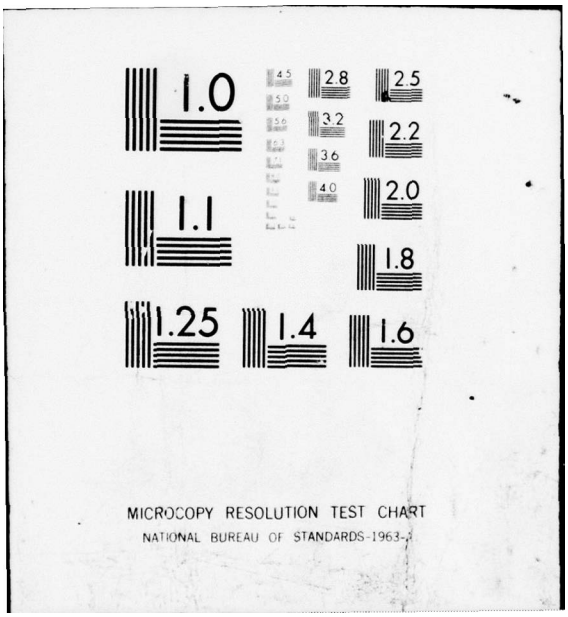
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(2) LEVEL II

OCCUPATIONAL SURVEY REPORT

INFLIGHT REFUELING OPERATOR CAREER LADDER

AFSCs 11230, 11250, 11270, 11290

AFPT 90-112-219

AUGUST 1978

OCCUPATIONAL SURVEY BRANCH
USAF OCCUPATIONAL MEASUREMENT CENTER
LACKLAND AFB TEXAS 78236

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PREFACE

This report presents the results of a detailed Air Force Occupational Survey of the Inflight Refueling Operator career ladder (AFSCs 11230, 11250, 11270, and 11290). The project was directed by USAF Program Technical Training, Volume 2, dated February 1977. Authority for conducting occupational surveys is contained in AFR 35-2. Computer outputs from which this report was produced are available for use by operating and training officials.

The survey instrument was developed by Second Lieutenant Linda Wiekhorst, Inventory Development Specialist. Captain John X. Olivo analyzed the survey data and wrote the final report. This report has been reviewed and approved by Lieutenant Colonel Jimmy L. Mitchell, Chief, Airman Career Ladders Analysis Section, Occupational Survey Branch, USAF Occupational Measurement Center, Lackland AFB, Texas 78236.

Computer programs for analyzing the occupational data were designed by Dr. Raymond E. Christal, Occupational and Manpower Research Division, Air Force Human Resources Laboratory (AFHRL), and were written by the Project Analysis and Programming Branch, Computational Sciences Division, AFHRL.

Copies of this report are available to air staff sections, major commands, and other interested training and management personnel upon request to the USAF Occupational Measurement Center, attention of the Chief, Occupational Survey Branch (OMY), Lackland AFB, Texas 78236.

This report has been reviewed and is approved.

JAMES A. TURNER, JR., Col, USAF
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SUMMARY OF RESULTS

1. Survey Coverage: Task inventory booklets were administered to Inflight Refueling Operator career ladder personnel during the period November 1977 through April 1978. Survey results are based on responses from 696 respondents. This represents 72 percent of all assigned personnel.

2. Career Field Structure: The major jobs identified within the career ladder were Squadron/Wing Boom Operators, Superintendents/Managers, and Curriculum Developers. The squadron/wing boom operators formed the core of the ladder, comprising 87 percent of the respondents. Included in this group were line boom operators, flight examiners, combat crew training school (CCTS) instructors, and squadron instructors.

3. DAFSC Findings: There is a high degree of overlap in the tasks performed on crew duty across skill levels. Whether an incumbent is a 5- or 9-skill level, he is performing the same technical tasks. The 5-skill level incumbent is primarily a line boom operator. The 7-skill level respondent still performs as a line boom operator but also serves as instructor and flight examiner. The 9-skill level personnel serve not only as instructors and flight examiners but also as squadron administrators.

Similar trends were noted as experience increases. First enlistment personnel are line boom operators. Second and third enlistment respondents are instructors. The fourth and fifth enlistment personnel are instructors and flight examiners. Personnel in their sixth and subsequent enlistment are managers or acting first sergeants.

4. Career Field Documentation: The AFR 39-1 Specialty Descriptions and the Specialty Training Standards are comprehensive depictions of the duties and responsibilities of the various skill levels within the inflight refueling operator career field.

OCCUPATIONAL SURVEY REPORT
INFLIGHT REFUELING OPERATOR CAREER LADDER
(AFSCs 11230, 11250, 11270, 11290)

INTRODUCTION

This is a report of an occupational survey of the Inflight Refueling Operator career ladder (AFSCs 11230, 11250, 11270, 11290) completed by the Occupational Survey Branch, USAF Occupational Measurement Center in August 1978. This is the first occupational survey of this career ladder.

The personnel assigned to the Inflight Refueling Operator career ladder are primarily assigned to the Strategic Air Command (SAC) and are qualified on the KC-135 aircraft. As the USAF single manager for inflight refueling, SAC provides inflight refueling for all USAF aircraft. The inflight refueling operator's primary job is to assist the pilot in conducting the air refueling. The inflight refueling operator, commonly referred to as the "boom operator", visually or verbally directs the receiver aircraft pilot into the refueling envelope and then uses the static boom or the drogue to conduct refueling. Additionally the boom operator serves as loadmaster when the aircraft is carrying cargo or passengers.

The current project was a routine survey of the career ladder as directed by AFR 35-2. The survey addresses three areas: (1) development and administration of the survey instrument; (2) the job structure found within the Inflight Refueling Operator career ladder and how this relates to skill level and experience level groups; and (3) comparisons of the job structure with current career ladder documents such as the AFR 39-1 Specialty Descriptions and the Specialty Training Standard (STS).

INVENTORY DEVELOPMENT

The data collection instrument for this occupational survey was USAF Job Inventory AFPT 90-112-219. Thorough research of publications and directives and personal interviews with 13 subject-matter specialists at three bases led to final development of the survey instrument, which consists of 210 tasks grouped under six duty headings.

SURVEY ADMINISTRATION

During the period November 1977 through April 1978, consolidated base personnel offices in operational units worldwide administered the inventory booklets to job incumbents holding Inflight Refueling DAFSCs. These job incumbents were selected from a computer generated mailing list obtained from personnel data tapes maintained by the Air Force Human Resources Laboratory (AFHRL). Each individual who completed the inventory first completed an identification and biographical information section, then checked each task performed in their current job.

After checking all tasks performed, each incumbent then rated each of these tasks on a nine-point scale showing relative time spent on that task as compared to all other tasks checked. The ratings ranged from one (very-small amount time spent) through five (about-average time spent) to nine (very-large amount time spent). To determine relative time spent for each task checked by a respondent, all an incumbent's ratings are assumed to account for 100 percent of his or her time spent on the job and are summed. Each task rating is then divided by the total task responses and the quotient multiplied by 100. This procedure provides a basis for comparing tasks not only in terms of percent members performing but also in terms of average percent time spent.

SURVEY SAMPLE

Personnel are selected to participate in this survey so as to insure proper representation across MAJCOM and DAFSC groups. Table 1 reflects the percentage distribution, by major command, of assigned personnel in the career ladder as of March 1978. Also reflected is the distribution by major command of incumbents in the final sample. Tables 2 and 3 reflect the distribution of the survey sample in terms of DAFSC and Total Active Federal Military Service (TAFMS) groups. As shown, an average of 71 percent of each skill level was sampled and approximately 18 percent of the sample were in the first enlistment. The 696 respondents making up this final sample represents 72 percent of the total AFSC population of 962 members and were found to be an adequate and representative sampling of the overall career ladder.

TABLE 1

COMMAND REPRESENTATION OF SURVEY SAMPLE

COMMAND	PERCENT OF PERSONNEL ASSIGNED	PERCENT OF SAMPLE
SAC	96	96
OTHER	4	4
TOTAL	100	100

TOTAL ASSIGNED - 962
TOTAL SAMPLED - 696
PERCENT SAMPLED - 72%

TABLE 2

DAFSC DISTRIBUTION OF SURVEY SAMPLE

DAFSC	NUMBER ASSIGNED	FINAL NUMBER USABLE RETURNS	PERCENT OF ASSIGNED SAMPLED
11230	74	41	55
11250	398	246	61
11270	301	284	94
11290	162	120	74

TABLE 3

TAFMS DISTRIBUTION OF SURVEY SAMPLE

MONTHS IN SERVICE	1-48	49-96	97+
NUMBER IN FINAL SAMPLE	127	159	408
PERCENT OF SAMPLE	18%	23%	59%

CAREER LADDER STRUCTURE

This occupational analysis of the 112X0 career ladder is designed to identify the major types of work being performed by career ladder incumbents by examining both the job descriptions and background data of each major job group. This analysis is made possible by the Comprehensive Occupational Data Analysis Programs (CODAP) which generate a hierarchical clustering of all jobs based on the similarity of tasks performed and relative time spent. By utilizing job structure as a starting point, it is possible first to describe the job structure of the career ladder as it presently exists and to formulate an understanding of current utilization patterns within the career ladder. This information is then used to examine the accuracy and completeness of present career ladder documents (AFR 39-1 Specialty Descriptions and Specialty Training Standard).

The basic identifying group used in the hierarchical job structure is the Job Type. A job type is a group of individuals who perform many of the same tasks and spend similar amounts of time performing these tasks. When there is a substantial degree of similarity between different job types, they are grouped together in a Cluster. Finally, there are often specialized jobs that are too dissimilar to be grouped into any cluster. These unique groups are labeled Independent Job Types.

The job structure of the Inflight Refueling Operator career ladder consists of two major clusters and an independent job type. Based on relative time spent and task similarity, the most realistic division of the jobs performed in the Inflight Refueling Operator career ladder was determined to be that illustrated in Figure 1. The two major clusters and independent job type identified were as follows:

I. Squadron/Wing Boom Operators (N=605)

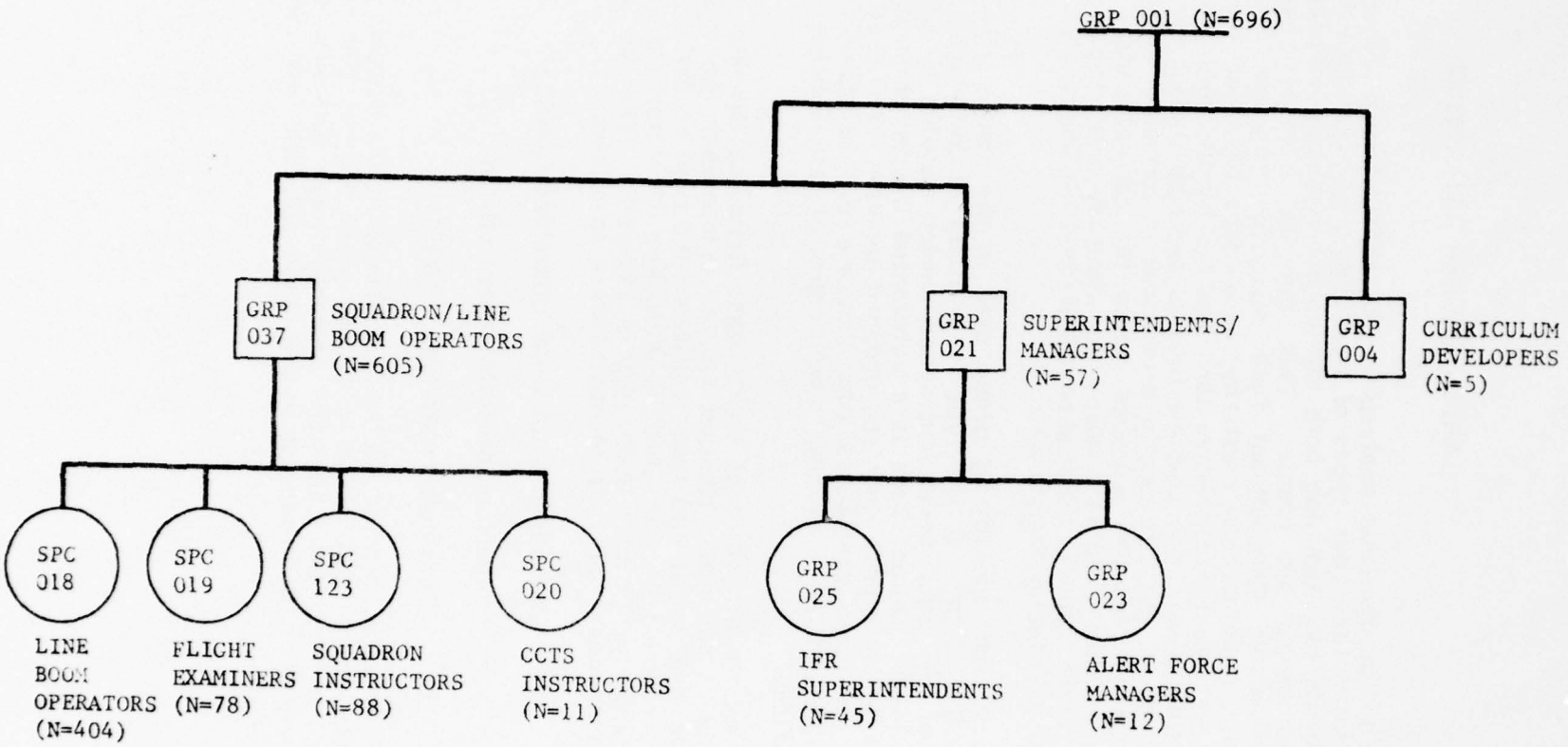
II. Superintendents/Managers (N=57)

III. Curriculum Developers (N=5)

Ninety-six percent of the incumbents in the sample were found to perform jobs within the three groups listed above. The remaining four percent of the sample included members whose jobs were not associated with any of these groupings and who did not form into any recognizable job groups.

FIGURE 1

INFLIGHT REFUELING OPERATORS CAREER LADDER



Group Descriptions

The following paragraphs contain brief descriptions of the three major groups which constitute the Inflight Refueling Operator career ladder. Tables 4 and 5 reflect background information on each of the groups. Appendix A lists representative tasks performed by each group.

I. Squadron/Wing Boom Operators. The 605 members of this group, representing 87 percent of the survey sample, form the core of the career ladder. Twenty-one percent of the personnel in this cluster are in their first enlistment. Respondents perform the day-to-day activities most closely associated with an inflight refueling squadron. Job interest and felt utilization of talents and training among these respondents was high (See Table 5). Within this large cluster, four job types were identified.

The Line Boom Operators perform primarily flying and alert duties. The respondents indicated they performed alert duty an average of eight to 14 days during the last month. Their flight duties comprise the remainder of their job time. Typical ground tasks performed by this group included attending ground training, performing alert checklists, and securing cargo. Inflight tasks included taking inflight celestial observations, performing boom or drogue refueling, and visually or verbally directing receiver aircraft into refueling position.

The Flight Examiners are required to guarantee the mission capability of the boom operator crew force. While all respondents in this group perform similar tasks, they are assigned to several different locations. The majority of the flight examiners are assigned at the wing level. However, several members are also assigned to the 1st Combat Evaluation Group (CEVG). There are no first enlistment personnel in the group, and only five percent of the group indicate they have a 11250 DAFSC. In addition to the normal crew related tasks, the primary tasks this group performs are evaluation tasks. Typically the evaluation tasks include administering proficiency or standardization checks, developing standardization examinations, and evaluating compliance with work standards. Alert commitment among these personnel ranged from one to seven days on alert during the previous month. Most of this alert was performed by wing flight examiners.

There were two instructor job types identified within the Squadron/ Wing Boom Operator cluster. The Combat Crew Training School (CCTS) instructors are all assigned to the 93rd Air Refueling Squadron at Castle AFB, CA. Their job is to provide initial qualification training for all personnel entering the inflight refueling career ladder. The larger group of instructors are assigned to all the various air refueling squadrons. Their job includes providing continuation, upgrade, requalification, and local checkout training. Whether at CCTS or at one of the various air refueling squadrons, the tasks performed by these two groups of instructors are very similar. The difference between the two groups is that CCTS instructors perform instructor

duty as their primary job, while squadron instructors perform as instructors as an additional duty. Also, while CCTS instructors performed no alert during the month prior to survey administration, squadron instructors were on alert an average of eight to 14 days.

II. Superintendents/Managers. These 57 respondents are primarily 9-skill level personnel with an average of 249 months total active federal military service (TAFMS) and 187 months in the career ladder. Job interest and felt utilization of talents and training among these personnel was high (See Table 5).

This group is made up of two smaller job types. The Inflight Refueling Superintendents are still primarily a crew resource within the squadron. As a crew member, he performs the same job as the Line Boom Operators. However, because of his seniority, a large part of his duty time is spent performing additional duties such as building custodian, funds manager, OJT monitor, etc. Generally these personnel spend less than seven days a month on alert. The second subgroup is the Alert Force Managers. These twelve 9-skill level personnel are responsible for the successful operation of the alert force facilities. Typical tasks performed include developing budget or financial requirements; conducting staff meetings other than crew related; and evaluating maintenance or use of workspace, equipment, or supplies.

III. Curriculum Developers. These five respondents are responsible for developing training materials for use either in CCTS or in squadron training programs. Typical tasks performed include developing curricula, plans of instruction (POIs), specialty training standards (STSs), training aids, and examinations other than for standardization. Eighty percent of these individuals found their job interesting and felt that their talents and training were utilized fairly well or better.

Summary

From the jobs performed by career ladder personnel, it is clear that the primary duty of nearly all respondents is to perform aircrew and alert functions. While there is some distinction in jobs such as line boom operator, instructor, and flight examiner, one sees that even at the 9-skill level the majority of the personnel are flying. Cluster analysis did not identify groups of working supervisors and managers/administrators that are found in many career ladders. The only group of respondents that supervised people as a normal part of their job were the Alert Force Managers.

TABLE 4

SELECTED BACKGROUND INFORMATION FOR JOB GROUPS

	SQUADRON/ WING BOOM OPERATORS	LINE BOOM OPERATORS	FLIGHT EXAMINERS	SQUADRON INSTRUCTORS	CCTS INSTRUCTORS	SUPERINTENDENTS/ MANAGERS	INFLIGHT REFUELING SUPERINTENDENTS	ALERT FORCE MANAGERS	CURRICULUM DEVELOPERS
AVERAGE NUMBER OF TASKS PERFORMED	89	78	110	113	87	148	161	100	70
AVERAGE NUMBER OF PERSONS SUPERVISED	0	0	0	0	0	3	3	3	0
AVERAGE TIME IN CAREER FIELD (MONTHS)	75	56	132	91	85	187	175	232	161
AVERAGE TOTAL ACTIVE FEDERAL MILITARY SERVICE TIME (MONTHS)	131	104	204	163	174	249	241	280	212
PERCENT MEMBERS IN FIRST ENLISTMENT	21	29	0	8	0	2	2	0	0
DAFSC 11230	7	10	0	0	0	0	0	0	0
DAFSC 11250	39	52	5	24	0	5	7	0	0
DAFSC 11270	43	34	59	62	91	12	16	0	60
DAFSC 11290	11	3	36	14	9	81	76	100	40

TABLE 5

JOB SATISFACTION INFORMATION FOR JOB GROUPS
(PERCENT MEMBERS PERFORMING)

	SQUADRON/ WING BOOM OPERATORS	LINE BOOM OPERATORS	FLIGHT EXAMINERS	SQUADRON INSTRUCTORS	CCTS INSTRUCTORS	SUPERINTENDENTS/ MANAGERS	INFLIGHT REFUELING SUPERINTENDENTS	ALERT FORCE MANAGERS	CURRICULUM DEVELOPERS
JOB INTEREST									
DULL	4	5	3	2	0	5	4	8	20
SO-SO	6	6	8	4	0	5	4	8	0
INTERESTING	86	85	86	91	100	85	85	84	80
NO REPLY	4	4	3	3	-	5	7	-	-
UTILIZATION OF TALENTS									
NOT AT ALL OR VERY LITTLE	14	16	6	14	9	11	11	8	20
FAIRLY WELL OR BETTER	85	84	94	84	91	89	89	92	80
NO REPLY	1	-	-	2	-	-	-	-	-
UTILIZATION OF TRAINING									
NOT AT ALL OR VERY LITTLE	5	4	3	7	18	18	18	17	20
FAIRLY WELL OR BETTER	94	95	97	91	82	78	78	83	80
NO REPLY	1	1	-	2	-	4	4	-	-
REENLISTMENT INTENTIONS									
NO OR PROBABLY NO	29	31	22	26	18	26	22	42	-
YES OR PROBABLY YES	69	67	75	70	73	74	78	58	80
NO REPLY	2	2	3	4	9	-	-	-	20

ANALYSIS OF DAFSC GROUPS

In conjunction with examining the job structure of the career ladder, DAFSC groups are also examined as part of each occupational analysis. This analysis allows for identification of skill level differences. Furthermore, this data by DAFSC groups aids in the analysis of career field documents, such as AFR 39-1 specialty descriptions and the Specialty Training Standard.

Table 6 shows the relative percent time spent by skill level groups on the various duties in the job inventory. All personnel in the sample spend an average of 79 percent of their time performing preflight, postflight, and inflight duties (Duties E and F). Nearly 90 percent of the 5-skill level's job time is spent on these duties. Table 7 shows selected tasks from these two duties and the percent members performing from each skill level. As shown, there is a high degree of overlap in the tasks being performed. Therefore whether an incumbent is a 5- or 9-skill level boom operator, when he is performing crew duty the tasks he performs are the same.

The 5-skill level job is primarily that of line boom operator. As described in the CAREER LADDER STRUCTURE section of this report, the job of a line boom operator is divided between performing flying duties and alert. Very few of the 5-skill level incumbents serve as instructors and none serve as flight examiners.

The 7-skill level job is still primarily that of a line boom operator; however, these personnel also serve as instructors and flight examiners. Table 8 shows those tasks which best differentiate between the 5- and 7-skill level respondents. Those tasks are related to instructor or flight examiner duty. Correspondingly the relative amount of time spent performing training tasks increased from 4 to 10 percent from the 5- to the 7-skill level.

The 9-skill level incumbent is still spending over half his time in duties related to flying. However as identified in the CAREER LADDER STRUCTURE section of this report, the 9-skill level respondent performs many administrative and managment tasks normally associated with the superintendent. It should be remembered that the 9-skill level incumbent is still considered a crew resource, thus flying and alert duties are his primary job. The management type tasks, which are normally the principal job of the superintendent, are generally performed as an additional duty by the 9-skill level boom operator. Contrasting the job of the 7- and 9-skill level respondent, Table 9 shows those tasks which best differentiate between the two groups. As shown, the managment type tasks are performed primarily by the 9-skill level incumbent, while some flying tasks are performed by a greater number of 7-skill level incumbents.

TABLE 6

RELATIVE PERCENT TIME SPENT ON DUTIES BY DAFSC GROUPS

DUTY		DAFSC 11250 (N=246)	DAFSC 11270 (N=284)	DAFSC 11290 (N=120)
A	ORGANIZING AND PLANNING	1	2	7
B	DIRECTING AND IMPLEMENTING	4	7	11
C	INSPECTING AND EVALUATING	2	4	11
D	TRAINING	4	10	13
E	PERFORMING PREFLIGHT AND POSTFLIGHT DUTIES	49	42	31
F	PERFORMING INFLIGHT AIR REFUELING AND CRUISING DUTIES	40	35	27

TABLE 7

PERCENT OF DAFSC GROUPS PERFORMING SELECTED TASKS FROM DUTY E, PERFORMING PREFLIGHT AND POSTFLIGHT DUTIES, AND DUTY F, PERFORMING INFLIGHT AIR REFUELING AND CRUISING DUTIES (PERCENT MEMBERS PERFORMING)

TASK		DAFSC 11250	DAFSC 11270	DAFSC 11290
E2	ATTEND PREFLIGHT OR POST FLIGHT BRIEFINGS	97	98	98
E6	COMPLETE MISSION ACCOMPLISHMENT REPORTS (MARs)	91	93	97
E8	COMPUTE WEIGHT AND BALANCE CLEARANCE FORMS USING LOAD ADJUSTER (DD FORM 365F)	98	98	99
E11	COORDINATE OPERATIONAL WORK WITH OTHER CREW MEMBERS	89	90	90
E24	PERFORM LOAD PLANNING	93	90	86
E29	POSITION PROFESSIONAL EQUIPMENT AT BOOM OPERATORS FORWARD STATION	97	98	98
F6	INFORM PILOTS OF REFUELING OPERATION STATUS	98	95	94
F9	OPERATE BOOM CLEAR OF RECEIVER AIRCRAFT	98	96	97
F11	PERFORM NORMAL INFLIGHT CHECKLISTS	98	98	98
F19	REFUEL AIRCRAFT WITH BOOM REFUELING NORMAL	98	98	97
F23	TAKE INFLIGHT CELESTIAL OBSERVATIONS	99	98	97
F29	VISUALLY OBSERVE FLIGHT INSTRUMENTS	99	99	97

TABLE 8

TASKS WHICH MOST CLEARLY DIFFERENTIATE BETWEEN 5- AND 7-SKILL LEVEL 112X0 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASK		DAFSC 11250	DAFSC 11270	DIFFERENCE
D9	CONDUCT RECEIVER CATEGORY TRAINING	26	67	-41
D1	ADMINISTER TESTS	22	56	-34
D10	CONDUCT REMEDIAL TRAINING	24	56	-32
D16	DEMONSTRATE EQUIPMENT OR PROCEDURES	39	71	-32
D2	ADMINISTER RECURRENCY CHECKS	14	45	-31
D8	CONDUCT PROFICIENCY TRAINING	26	54	-28
D39	SCORE TESTS	20	47	-27
C1	ADMINISTER PROFICIENCY CHECKS	14	40	-26
B1	CLARIFY POLICIES, DIRECTIVES OR PROCEDURES FOR SUBORDINATES	22	48	-26

TABLE 9

TASKS WHICH MOST CLEARLY DIFFERENTIATE BETWEEN 7- AND 9-SKILL LEVEL 112X0 PERSONNEL
(PERCENT MEMBERS PERFORMING)

TASK		DAFSC 11270	DAFSC 11290	DIFFERENCE
A4	ASSIGN WORK TO INDIVIDUALS	23	71	-48
C27	INSPECT FACILITIES OR WORK AREAS FOR CONDITION OR APPEARANCE	15	62	-47
B10	DRAFT CORRESPONDENCE	28	72	-44
A24	SCHEDULE WORK ASSIGNMENTS	11	55	-44
A7	COORDINATE OPERATIONAL WORK ACTIVITIES WITH OTHER SECTIONS	23	67	-44
A3	ASSIGN WORK PRIORITIES	11	54	-43
C33	PROVIDE TECHNICAL ASSISTANCE FOR JOB RELATED PROBLEMS ENCOUNTERED BY SUBORDINATES	34	72	-38
E10	CONSTRUCT CO-PILOT MAPS	71	46	+25
E23	PERFORM ALERT CHECKLISTS	85	61	+24
E40	STAND FIRE GUARD	67	45	+22

ANALYSIS OF AFMS GROUPS

In this section, comparisons were made between groups of personnel on the basis of total active federal military service (TAFMS). Table 10 lists the relative percent time spent on the various duties. In general, the job differences between TAFMS groups are similar to those noted for DAFSC groups.

Among the six TAFMS groups, the following trends were noted. Members with 1-48 months TAFMS group spend 94 percent of their time in functions involving flying and alert duty. Among these personnel 90 percent identify themselves as line boom operators.

Second and third enlistment personnel spend an average of 85 percent of their available duty time performing flying duties. An average of 37 percent of these personnel call themselves instructors.

Personnel in the fourth and fifth enlistment spend 74 percent of their time on flying and alert duties. Less than half (45 percent) of these personnel call themselves line boom operators. Most call themselves instructors and one-third identify their job titles as standardization/evaluation instructors.

Personnel with 241+ months TAFMS spend only 62 percent of their time on flying and alert duties. However, personnel with 241+ months TAFMS spend nearly one-third of their time in supervisory and managerial functions.

As an aid to career field managers, job interest and perceived utilization of talents and training data for first and second enlistment, and career TAFMS groups is shown in Table 11. Eighty-three percent of the career TAFMS groups perceive their job as interesting, which is slightly higher than the composite average of 80 percent for career members from other specialties surveyed during 1977. First and second enlistment 112X0 personnel find their job much more interesting than the first and second enlistment groups in career fields studied in 1977. Perceived utilization of talents and training for first, second, and career enlistment groups in AFS 112X0 is quite high and well above the average of respective enlistment groups in other USAF career fields. The data in Table 11 also indicates that reenlistment intentions for first, second, and career 112X0 AFMS groups is comparable to those of other respective USAF career ladders.

In summary, the changes that occur as a function of increasing experience in the AFS 112X0 career ladder reflect a shift in emphasis of common job characteristics rather than a definite change in the actual nature of the job performed. Time spent on flying and alert duties is indicative of this. While first enlistment personnel spend 95 percent of their time flying and on alert, personnel in sixth and subsequent enlistment still spend nearly two-thirds of their time performing these same duties. The jobs performed by personnel can be characterized as

line boom operators in the first enlistment. The second and third enlistment groups are instructors. Personnel in fourth and fifth enlistment groups are either instructors or flight examiners. The personnel in the sixth group are managers or acting first sergeants. The job satisfaction data reported by 112X0 personnel is consistently higher than that collected for all other specialties surveyed in 1977. Compared to other aircrew operations career ladders (AFSs 113x0, 114X0, 115X0) previously surveyed, the inflight refueling career ladder compares favorably with each one.

TABLE 10

RELATIVE PERCENT TIME SPENT ON DUTIES BY AFMS GROUPS

DUTY		1-48 MOS (N=127)	49-96 MOS (N=159)	97-144 MOS (N=84)	145-192 MOS (N=79)	193-240 MOS (N=124)	241+ MOS (N=121)
A	ORGANIZING AND PLANNING	1	1	1	2	3	6
B	DIRECTING AND IMPLEMENTING	2	4	5	7	8	10
C	INSPECTING AND EVALUATING	1	2	3	4	6	11
D	TRAINING	2	6	7	10	11	11
E	PERFORMING PREFLIGHT AND POST-FLIGHT DUTIES	51	48	46	42	38	33
F	PERFORMING INFLIGHT AIR REFUELING AND CRUISING DUTIES	43	39	38	35	34	29

TABLE 11

EXPRESSION OF JOB INTEREST, PERCEIVED UTILIZATION OF TALENTS AND TRAINING, AND REENLISTMENT INTENTIONS FOR SURVEY REPSONDENTS BY AFMS GROUPS (PERCENT MEMBERS RESPONDING)

	1-48 MOS (N=127)	49-96 MOS (N=159)	97+ MOS (N=408)
I FIND MY JOB			
DULL	2	3	5
SO-SO	9	4	7
INTERESTING	88	90	83
NO REPLY	1	3	5
MY JOB UTILIZES MY TALENTS			
NOT AT ALL OR VERY LITTLE	20	10	13
FAIRLY WELL OR BETTER	80	90	86
NO REPLY	-	-	1
MY JOB UTILIZES MY TRAINING			
NOT AT ALL OR VERY LITTLE	2	4	9
FAIRLY WELL OR BETTER	98	94	90
NO REPLY	-	2	1
DO YOU PLAN TO REENLIST			
NO OR PROBABLY NO	50	21	24
YES OR PROBABLY YES	48	79	73
NO REPLY	2	-	3

ANALYSIS OF TASK DIFFICULTY

From a listing of airman identified for the 112X0 job survey, incumbents holding a 7- or 9- skill level were selected to rate task difficulty. Tasks were rated on a nine-point scale from extremely low to extremely high difficulty, with difficulty defined as the length of time it takes an average airman to learn to do the task. Interrater reliability (as assessed through components of variance of standard group means) for the 47 raters was .95. Ratings were adjusted so that tasks of average difficulty had ratings of 5.00.

Table 12 lists those tasks rated above average in difficulty performed by 50 percent or more of the survey respondents. These tasks include computing weight and balance using a load adapter; conducting refueling operations; and checking navigation computations. Other tasks rated above average in difficulty but performed by less than 50 percent of the survey respondents include supervisory, administrative, and management functions. Typical tasks include preparing Airmen Performance Reports (APR), directing standardization programs, developing resident course examinations and directing OJT.

The 15 tasks rated lowest in difficulty which are performed by 50 percent or more of the survey respondents are listed in Table 13. These tasks include storing ground safety locks, performing aircraft housekeeping, obtaining flight lunches, and positioning parachutes or oxygen (O_2) bottles. Other tasks rated lowest in difficulty include completing a number of different forms such as publication receipt forms (SAC Form 548), maintenance discrepancy forms (AFTO Form 781A), and fuels issue/defuel (AF Form 1994). Also included are tasks such as attending ground training, maintaining personal flight manuals, and obtaining information concerning air refueling mission activity.

Job Difficulty Index (JDI)

Having computed the task difficulty index for each inventory item, it was then possible to compute a Job Difficulty Index (JDI) for the functional groups identified in the survey analysis. The index provides a relative measure of which jobs, when compared to other jobs identified in the analysis, are more or less difficult. The JDI is based on an equation using number of tasks performed and the average difficulty per unit time spent. The index ranks jobs on a scale of 1 to 25, with the 1 ranking representing very easy jobs and the 25 ranking representing very difficult jobs. The indicies are then adjusted so that the average job difficulty index is 13.00. The JDI was computed for the major job groups identified in the career ladder structure, and this information is presented in Table 14.

The data presented in Table 14 indicates that all the various jobs performed by boom operators are above average in difficulty except for the job of Line Boom Operator. Those jobs rated most difficult included the supervision and management of non-personnel resources and the evaluation of job performance by other personnel.

TABLE 12

TASKS RATED ABOVE AVERAGE IN DIFFICULTY PERFORMED BY 50 PERCENT OR MORE OF SURVEY RESPONDENTS

TASK		TASK DIFFICULTY INDEX	PERCENT MEMBERS PERFORMING
E8	COMPUTE WEIGHT AND BALANCE CLEARANCE FORMS USING LOAD ADJUSTER (DD FORM 365F)	5.9	98
F19	REFUEL AIRCRAFT WITH BOOM REFUELING NORMAL	5.8	98
F4	CHECK ACCURACY OF NAVIGATIONAL COMPUTATIONS	5.5	72
F3	FUEL FORMS	5.5	92
E30	PREPARE AIRCRAFT OR GENERAL CARGO FOR LOADING OR UNLOADING	5.4	87
F18	PRACTICE FLIGHT SAFETY PROCEDURES	5.3	97
F9	OPERATE BOOM CLEAR OR RECEIVER AIRCRAFT	5.3	97
F21	REFUEL AIRCRAFT WITH DROGUE REFUELING	5.2	83
F24	UPDATE AIRCRAFT UTILIZATION FORMS (SAC FORM 76)	5.2	95
F10	OPERATE INFLIGHT REFUELING SYSTEM TO ACCOMPLISH REVERSE REFUELING	5.2	51
E31	REFUEL AIRCRAFT THROUGH SINGLE POINT REFUELING RECEPTACLES	5.2	67
D16	DEMONSTRATE EQUIPMENT OR PROCEDURES	5.2	57
F25	VERBALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	5.2	97
E37	REVIEW PRE-LOAD MANIFEST	5.0	78
F20	REFUEL AIRCRAFT WITH BOOM REFUELING TANKER MANUAL	5.0	97
F22	SUPERVISE PASSENGERS	5.0	95
E23	PERFORM ALERT CHECKLISTS	5.0	84
F30	VISUALLY OBSERVE FUEL PANELS	5.0	99

TABLE 13

THE 15 TASKS RATED LOWEST IN DIFFICULTY PERFORMED BY 50 PERCENT OR MORE OF SURVEY RESPONDENTS

TASKS		TASK DIFFICULTY INDEX	PERCENT MEMBERS PERFORMING
E41	STOW GROUND SAFETY LOCKS	3.5	98
E15	INSTALL ENGINE STARTER CARTRIDGE	3.3	59
E27	PERFORM OR PRACTICE GROUND EMERGENCY PROCEDURES	3.1	92
E22	PERFORM AIRCRAFT HOUSEKEEPING	3.0	80
E17	OBTAIN FLIGHT LUNCHES	2.9	96
F7	MONITOR RADIO COMMUNICATIONS	2.8	99
E11	COORDINATE OPERATIONAL WORK WITH OTHER CREW MEMBERS	2.8	89
E39	SELECT OR FIT PERSONAL AND SPARE PARACHUTES	2.8	80
E43	TRANSFER EQUIPMENT FROM BUS OR AIRCRAFT	2.7	98
E20	OPERATIONALLY CHECK DIRECT CURRENT (DC) OR ALTERNATING CURRENT (AC) SYSTEMS	2.6	53
E42	TAKE GROUND PREFLIGHT CELESTIAL OBSERVATIONS	2.4	95
E16	INVENTORY PREPOSITIONED LIFE SUPPORT EQUIPMENT	2.2	94
E40	STAND FIRE GUARD	1.8	62
E21	ORDER FLIGHT LUNCHES	1.7	95

TABLE 14

JOB DIFFICULTY INDICIES FOR CAREER LADDER GROUPS

GROUPS		JOB DIFFICULTY INDEX
I.	SQUADRON/WING BOOM OPERATORS	12.2
	a. LINE BOOM OPERATORS	10.0
	b. FLIGHT EXAMINERS	17.3
	c. SQUADRON INSTRUCTORS	16.6
	d. CCTS INSTRUCTORS	14.2
II.	SUPERINTENDENTS/MANAGERS	22.0
	a. IFR SUPERINTENDENTS	23.2
	b. ALERT FORCE MANAGERS	17.4
III.	CURRICULUM DEVELOPERS	17.4

OTHER ANALYSES

Survey data was used to analyze other areas related to the Inflight Refueling Operator career ladder. These analyses included reviewing AFR 39-1 Specialty Descriptions and reviewing the Specialty Training Standards (STS). Brief summaries of these analyses are presented below.

AFR 39-1 Specialty Descriptions

Job descriptions derived from the survey data for each of the various skill levels were compared to corresponding AFR 39-1 specialty descriptions. Results of this review indicated that the current specialty descriptions cover the major duties and responsibilities of 5-, 7- and 9-skill level personnel.

The specialty descriptions for each skill level indicated a high degree of overlap between the duties and responsibilities of each skill level. The 5-skill level job description covers the boom operator tasks and identifies an incumbent's responsibility as an instructor. The 7-skill level description covered not only boom operator and instructor duties, but also flight examiner duties. The 9-skill level specialty description not only included those three functions, but also included supervisory and management functions which the 9-skill level member performs.

Specialty Training Standards

A review of the 112X0 STS was accomplished to compare the items listed against the job descriptions for each DAFSC. There were no discrepancies identified between the tasks listed in the STS and the tasks comprising the job description for each skill level.

Write In Comments

At the end of each job inventory respondents are encouraged to write-in any additional tasks which, for some reason, might not have appeared in the inventory. There were no significant write in tasks. Personnel also are permitted to comment on any other areas which concerns their AFSC. The following is a list of the most frequently encountered comments which are provided for informational purposes only and should not be construed to reflect any reliable data collected during this survey.

1. Utilization of Senior NCO's and 9-Skill Level Personnel. Eleven survey respondents felt that the senior NCOs were not being used in a manner commensurate with their rank. The key to this is that all boom operators assigned to squadrons are crew resources.

Therefore, most of the "non-flying" duties they must perform because of their rank are additional duties. Some of these duties include monitoring upgrade training, monitoring proficiency training, acting as senior enlisted adviser, and many of the normal first sergeant duties. However, this person is still a crew resource, thus whenever a vacancy occurs on a crew he immediately is placed on that crew.

This situation, then, creates another problem, as identified by write in comments. The senior NCOs indicate that it is quite difficult for them to promote career progression among the younger boom operators when those young boomers see that the future holds much greater demands on their available duty time, but with little reward. It should not be forgotten that as a whole the 9-skill level incumbents spend an average of almost two-thirds of this time flying and on alert.

In conversation with several senior boom operators Air Force wide, the solution they all suggest is to establish one or possibly even two positions in each air refueling squadron for senior boom operators. These positions should not be crew resource positions but filled by boom operators whose job is assisting the squadron commander in managing and training the boom operator crew force.

2. Amount of Alert. Ten respondents indicated that to get a clear picture of their alert commitment one should look at how much alert was performed during a six month period rather than the 30 day period asked for in the current inventory. They feel that a six month time frame would show many of the boom operators pulling nine to 12 weeks of alert during the 24 week period. Generally these boom operators feel that their alert commitment is too high and their flying proficiency suffers.

3. Flight Pay and Per Diem. Typical comments concerning this area by four survey respondents are: "I feel that flight pay is very much below the expected performance of a combat crew member. It's even harder to understand per diem rates for enlisted crewmembers." Another respondent writes "Attitudes of personnel would improve greatly, thereby improving performance if flight pay and per diem rates were adjusted to remove rules which discriminate unfairly against enlisted personnel."

DISCUSSION

This analysis of the inflight refueling career ladder was the first such survey completed. In general it found that there was a large common core of tasks performed by all career ladder personnel. Personnel with greater seniority and higher skill level performed a larger number of tasks than those with less seniority and lower skill levels. This was due to all personnel performing the same aircrew or alert related tasks. The more senior personnel additionally perform tasks involving instructing, evaluating, and administering.

Career field documents such as the AFR 39-1 Specialty Descriptions and Specialty Training Standard (STS) were found to be excellent supporting documents. Both documents were quite accurate in terms of describing the tasks performed by skill level groups and the jobs identified in the career ladder structure analysis.

Job satisfaction indicates in terms of job interest, perceived utilization of talents and training, and reenlistment intentions were all well above those reported by personnel surveyed in 1977. The data compared favorably with that of other aircrew operations career ladders previously surveyed.

APPENDIX A

REPRESENTATIVE TASKS PERFORMED BY SQUADRON/WING BOOM OPERATORS

TASK		PERCENT MEMBERS PERFORMING
E1	ATTEND GROUND TRAINING	96
E3	BRIEF FLIGHT CREW CONCERNING AIR REFUELING MISSION ACTIVITIES	95
E6	COMPLETE MISSION ACCOMPLISHMENT REPORTS (MARs)	93
E12	DELIVER FLIGHT LUNCHES	83
E13	DIRECT CARGO LOADING OR UNLOADING	94
E16	INVENTORY PREPOSITIONED LIFE SUPPORT EQUIPMENT	98
E23	PERFORM ALERT CHECKLISTS	89
F2	ANNOTATE DISCREPANCIES IN MAINTENANCE DISCREPANCY AND WORK DOCUMENT FORMS (AFTO FORM 781A)	97
F6	INFORM PILOTS OF REFUELING OPERATION STATUS	98
F9	OPERATE BOOM CLEAR OF RECEIVER AIRCRAFT	99
F16	PERFORM OR PRACTICE TANKER AR BREAKAWAY PROCEDURES	99
F19	REFUEL AIRCRAFT WITH BOOM REFUELING NORMAL	100
F21	REFUEL AIRCRAFT WITH DROGUE REFUELING	86
F23	TAKE INFLIGHT CELESTIAL OBSERVATIONS	100

REPRESENTATIVE TASKS PERFORMED BY LINE BOOM OPERATORS

TASK		PERCENT MEMBERS PERFORMING
E4	COMPLETE FUELS ISSUE/DEFUEL DOCUMENT FORMS (AF FORM 1994)	95
E8	COMPUTE WEIGHT AND BALANCE CLEARANCE FORMS USING LOAD ADJUSTER (DD FORM 365F)	100
E14	INITIATE AIRCRAFT UTILIZATION FORMS (SAC FORM 76)	95
E18	OBTAIN INFORMATION CONCERNING AIR REFUELING MISSION ACTIVITY	98
E24	PERFORM LOAD PLANNING	91
E28	POSITION PARACHUTES OR OXYGEN (O_2) BOTTLES	95
F7	MONITOR RADIO COMMUNICATIONS	100
F17	PERIODICALLY CHECK CARGO RESTRAINTS	97
F22	SUPERVISE PASSENGERS	96
F24	UPDATE AIRCRAFT UTILIZATION FORMS (SAC FORM 76)	97
F25	VERBALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	99

REPRESENTATIVE TASKS PERFORMED BY FLIGHT EXAMINERS

TASK		PERCENT MEMBERS PERFORMING
C1	ADMINISTER PROFICIENCY CHECKS	96
C2	ADMINISTER STANDARDIZATION BOARD CHECKS	94
C12	EVALUATE EMERGENCY PROCEDURES	99
C22	EVALUATE STANDARDIZATION PROGRAMS	63
D1	ADMINISTER TESTS	97
D2	ADMINISTER RECURRENCY CHECKS	96
D23	DEVELOP STANDARDIZATION EXAMINATIONS	91
E2	ATTEND PREFLIGHT OR POSTFLIGHT BRIEFINGS	100
E13	DIRECT CARGO LOADING OR UNLOADING	99
E25	PERFORM NORMAL GROUND CHECKLISTS	96
F15	PERFORM POST AR CHECKLIST ITEMS	99
F28	VISUALLY OBSERVE ENGINE INSTRUMENTS	99

REPRESENTATIVE TASKS PERFORMED BY SQUADRON INSTRUCTORS

TASK		PERCENT MEMBERS PERFORMING
D3	ACT AS TRAINING ADVISOR	73
D8	CONDUCT PROFICIENCY TRAINING	82
D16	DEMONSTRATE EQUIPMENT OR PROCEDURES	90
D17	DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION	86
E2	ATTEND PREFLIGHT OR POST FLIGHT BRIEFINGS	98
E16	INVENTORY PREPOSITIONED LIFE SUPPORT EQUIPMENT	98
E27	PERFORM OR PRACTICE GROUND EMERGENCY PROCEDURES	100
F13	PERFORM PREPARATION FOR CONTACT CHECKLIST FOR NORMAL AIR REFUELINGS (ARs)	100
F15	PERFORM POST AR CHECKLIST ITEMS	100
F25	VERBALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	100

REPRESENTATIVE TASKS PERFORMED BY CCTS INSTRUCTORS

TASK		PERCENT MEMBERS PERFORMING
B4	COUNSEL PERSONNEL ON MILITARY OR PERSONAL RELATED PROBLEMS	82
B6	DIRECT EQUIPMENT OPERATION	91
D17	DEMONSTRATE HOW TO LOCATE TECHNICAL INFORMATION	100
D39	SCORE TESTS	82
E8	COMPUTE WEIGHT AND BALANCE CLEARANCE FORMS USING LOAD ADJUSTER (DD FORM 365F)	91
E14	INITIATE AIRCRAFT UTILIZATION FORMS (SAC FORM 76)	100
E18	OBTAIN INFORMATION CONCERNING AIR REFUELING MISSION ACTIVITY	100
E34	REVIEW CREW INFORMATION FILE CARD	100
F6	INFORM PILOTS OF REFUELING OPERATION STATUS	91
F14	PERFORM PREPARATION FOR CONTACT CHECKLIST FOR TANKER MANUAL ARs	100
F22	SUPERVISE PASSENGERS	91
F26	VISUALLY DIRECT RECEIVER AIRCRAFT INTO REFUELING POSITION	100

REPRESENTATIVE TASKS PERFORMED BY SUPERINTENDENTS/MANAGERS

TASK		PERCENT MEMBERS PERFORMING
A4	ASSIGN WORK TO INDIVIDUALS	98
A7	COORDINATE OPERATIONAL WORK ACTIVITIES WITH OTHER SECTIONS	89
B1	CLARIFY POLICIES, DIRECTIVES OR PROCEDURES FOR SUBORDINATES	95
B4	COUNSEL PERSONNEL ON MILITARY OR PERSONAL RELATED PROBLEMS	96
C5	COUNSEL SUBORDINATES ON WORK PROGRESS	93
C27	INSPECT FACILITIES OR WORK AREAS FOR CONDITION OR APPEARANCE	88
E2	ATTEND PREFLIGHT OR POST FLIGHT BRIEFINGS	100
E7	COMPLETE TRAINING ACCOMPLISHMENT AND PROGRESS REPORT FORMS (SAC FORM 631)	88
F13	PERFORM PREPARATION FOR CONTACT CHECKLIST FOR NORMAL AIR REFUELINGS (ARs)	98
F23	TAKE INFLIGHT CELESTIAL OBSERVATIONS	100

REPRESENTATIVE TASKS PERFORMED BY INFLIGHT REFUELING SUPERINTENDENTS

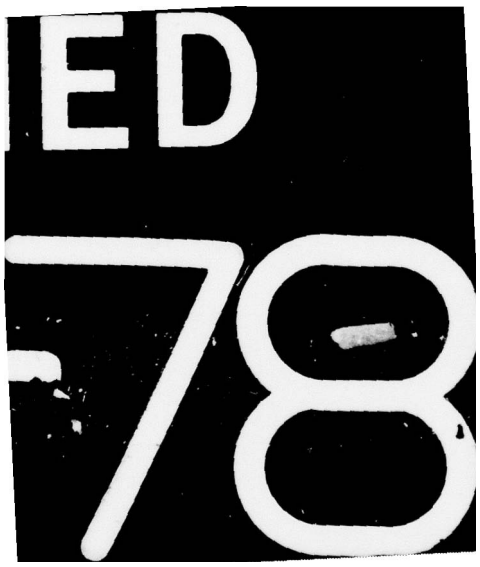
TASK		PERCENT MEMBERS PERFORMING
A6	CONSTRUCT ORGANIZATIONAL CHARTS OR STATUS BOARDS	71
A24	SCHEDULE WORK ASSIGNMENTS	91
B5	DEVELOP WORK METHODS OR PROCEDURES	93
B22	MAINTAIN PERSONAL FLIGHT MANUAL FILES	96
B29	SUPERVISE IFR OPERATOR SPECIALISTS (AFSC 11250)	91
C13	EVALUATE GROUND WORK PERFORMANCE OF SUBORDINATES	89
D1	ADMINISTER TESTS	96
D8	CONDUCT PROFICIENCY TRAINING	93
D21	DEVELOP EXAMINATIONS, OTHER THAN FOR STANDARDIZATION OR RESIDENT COURSES	80
D34	REVIEW TRAINING REPORTS	91

REPRESENTATIVE TASKS PERFORMED BY ALERT FORCE MANAGERS

TASK		PERCENT MEMBERS PERFORMING
A8	DEVELOP BUDGET OR FINANCIAL REQUIREMENTS	75
A12	ESTABLISH PROCEDURAL GUIDELINES SUCH AS OPERATING INSTRUCTIONS (OI'S) OR SPECIAL OPERATING INSTRUCTIONS (SOI'S)	92
A13	ESTABLISH REQUIREMENTS FOR EQUIPMENT OR SUPPLIES	92
A21	REVIEW UNIT EMERGENCY OR DISASTER PLANS	75
B17	INITIATE RECOGNITION FOR COMMENDABLE PERFORMANCES	92
B25	PREPARE REQUISITIONS FOR SUPPLIES, EQUIPMENT, OR TOOLS	100
C27	INSPECT FACILITIES OR WORK AREAS FOR CONDITION OR APPEARANCE	100
E18	OBTAIN INFORMATION CONCERNING AIR REFUELING MISSION ACTIVITY	92
F13	PERFORM PREPARATION FOR CONTACT CHECKLIST FOR NORMAL AIR REFUELINGS (ARs)	100

REPRESENTATIVE TASKS PERFORMED BY CURRICULUM DEVELOPERS

TASK		PERCENT MEMBERS PERFORMING
A5	ATTEND STAFF MEETINGS, COUNCIL MEETINGS, OR BOARD MEETINGS OTHER THAN CREW RELATED	80
A16	PLAN REPORTS OR RECORD KEEPING	80
D3	ACT AS TRAINING ADVISOR	80
D20	DEVELOP CURRICULA, PLANS OF INSTRUCTION (POI'S), SPECIALTY TRAINING STANDARDS (STS'S), OR TRAINING PLANS	60
D28	EVALUATE TRAINING METHODS, TECHNIQUES, OR PROGRAMS	60
D33	PROCURE TRAINING AIDS, SPACE, OR EQUIPMENT	60
D34	REVIEW TRAINING REPORTS	60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